Space Weather Forecast

Issued on Thursday, 04 August 2022 at 13:29 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: No significant activity.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity is low with one common class flare observed. There are currently two sunspot regions visible, with the main region of interest on the southwest disc with moderate magnetic complexity. The other region is a unipolar spot that has rotated onto the southeast disc. No Earth-directed CMEs (coronal mass ejections) were observed.

Solar Wind / Geomagnetic Activity: Earth is connected to the faster solar winds from a coronal hole on the Sun. This has led to elevated solar wind speeds starting the period around 540 km/s that have now settled back to around 430 km/s (slightly elevated). The strength of the magnetic field was generally weak, with the important north-south component fluctuating weakly. Geomagnetic activity was Quiet (Kp 1-2)

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Low solar activity is likely to continue, with a slight chance (20%) for activity becoming moderate.

Solar Wind / Geomagnetic Activity: No CMEs have been assessed as Earth-directed. Slightly-elevated solar winds are expected to continue declining as Earth exits into the background slow solar wind regime over the next 24 hours. Geomagnetic activity remaining Quiet with a chance of Unsettled intervals through the period, and a slight chance of an active interval.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to remain at background with no solar radiation storms occurring.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	10	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	20	20	20	30
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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